AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-28. (Canceled)

29. (Currently Amended) A method of diagnosing a disorder related to the presence of a molecular variant of an OCT1 gene or susceptibility to such a disorder comprising determining the presence of a polynucleotide comprising a polynucleotide selected from the group consisting of:

(a) a polynucleotide having the nucleic acid sequence of SEQ ID NO:4;

(b) a polynucleotide encoding a polypeptide having the amino acid sequence of SEQ ID NO:28;

(c) a polynucleotide having a nucleic acid sequence with at least 70%, at least 75%, at least 80%, at least 85%, at least 90% or at least 95% sequence identity to an OCT1 gene, wherein said polynucleotide has at least one nucleotide exchange or deletion at position 109130 of the OCT1 gene (GenBank Accession No: GI:9581607).

(d) a polynucleotide capable of hybridizing to an OCT1 gene, wherein said polynucleotide has at least one nucleotide substitution at a position corresponding to position 109130;

(e) a polynucleotide capable of hybridizing to an OCT1 gene, wherein said polynucleotide has a T at a position corresponding to position 109130 of the OCT1 gene (GenBank Accession No: GI: 9581607);

(f) a polynucleotide encoding an OCT1 polypeptide or fragment thereof, wherein said polypeptide comprises an amino acid substitution at position 61 of the OCT1 polypeptide (GenBank Accession No:GI:2511670); and

(g) a polynucleotide encoding an OCT1 polypeptide or fragment thereof, wherein said polypeptide comprises an amino acid substitution of R to C at position 61of the OCT1 polypeptide (GenBank Accession No: GI:2511670).~~of claim 1 in a sample from a subject~~.

30. (Currently Amended) The method of claim 29 further comprising determining the presence of:

a polypeptide or fragment therefore encoded by a polynucleotide comprising a polynucleotide selected from the group consisting of:

(a) a polynucleotide having the nucleic acid sequence of SEQ ID NO:4;

(b) a polynucleotide encoding a polypeptide having the amino acid sequence of SEQ ID NO:28;

(c) a polynucleotide having a nucleic acid sequence with at least 70%, at least 75%, at least 80%, at least 85%, at least 90% or at least 95% sequence identity to an OCT1 gene, wherein said polynucleotide has at least one nucleotide exchange or deletion at position 109130 of the OCT1 gene (GenBank Accession No: GI:9581607).

(d) a polynucleotide capable of hybridizing to an OCT1 gene, wherein said polynucleotide has at least one nucleotide substitution at a position corresponding to position 109130;

(e) a polynucleotide capable of hybridizing to an OCT1 gene, wherein said polynucleotide has a T at a position corresponding to position 109130 of the OCT1 gene (GenBank Accession No: GI: 9581607);

(f) a polynucleotide encoding an OCT1 polypeptide or fragment thereof, wherein said polypeptide comprises an amino acid substitution at position 61 of the OCT1 polypeptide (GenBank Accession No:GI:2511670); and

(g) a polynucleotide encoding an OCT1 polypeptide or fragment thereof, wherein said polypeptide comprises an amino acid substitution of R to C at position 61of the OCT1 polypeptide (GenBank Accession No: GI:2511670).~~of claim 11~~

or an ~~the~~ antibody which binds specifically to said polypeptide or fragment thereof.

31. (Currently Amended) A method of diagnosing a disorder related to the presence of a molecular variant of an OCT1 gene or susceptibility to such a disorder comprising determining the presence of:

a polypeptide or fragment therefore encoded by a polynucleotide comprising a polynucleotide selected from the group consisting of:

(a) a polynucleotide having the nucleic acid sequence of SEQ ID NO:4;

(b) a polynucleotide encoding a polypeptide having the amino acid sequence of SEQ ID NO:28;

(c) a polynucleotide having a nucleic acid sequence with at least 70%, at least 75%, at least 80%, at least 85%, at least 90% or at least 95% sequence identity to an OCT1 gene, wherein said polynucleotide has at least one nucleotide exchange or deletion at position 109130 of the OCT1 gene (GenBank Accession No: GI:9581607).

(d) a polynucleotide capable of hybridizing to an OCT1 gene, wherein said polynucleotide has at least one nucleotide substitution at a position corresponding to position 109130;

(e) a polynucleotide capable of hybridizing to an OCT1 gene, wherein said polynucleotide has a T at a position corresponding to position 109130 of the OCT1 gene (GenBank Accession No: GI: 9581607);

(f) a polynucleotide encoding an OCT1 polypeptide or fragment thereof, wherein said polypeptide comprises an amino acid substitution at position 61 of the OCT1 polypeptide (GenBank Accession No:GI:2511670); and

(g) a polynucleotide encoding an OCT1 polypeptide or fragment thereof, wherein said polypeptide comprises an amino acid substitution of R to C at position 61of the OCT1 polypeptide (GenBank Accession No: GI:2511670).

or an ~~the~~ antibody which binds specifically to said polypeptide or fragment thereof

in a sample from a subject.

32. (Previously Presented) The method of claim 29, wherein said disorder comprises side effects, or reduced activity of drug therapy, or non-activity of drug therapy as a result from aberrant serum and/or intracellular concentrations of compounds that are substrates of the transporter OCT1.

33. (Previously Presented) The method of claim 29 comprising DNA sequencing, hybridization techniques, PCR based assays, fluorescent dye and quenching agent-based PCR assay (Taqman PCR detection system), RFLP-based techniques, single strand conformational polymorphism (SSCP), denaturating gradient gel electrophoresis (DGGE), temperature gradient gel electrophoresis (TGGE), chemical mismatch cleavage (CMC), heteroduplex analysis based system, techniques based on mass spectroscopy, invasive cleavage assay, polymorphism ratio sequencing (PRS), microarrays, a rolling circle extension assay, HPLC-based techniques, DHPLC-based techniques, oligonucleotide extension assays (OLA), extension based assays (ARMS, (Amplification Refractory Mutation System), ALEX (Amplification Refractory Mutation Linear Extension), SBCE (Single base chain extension), a molecular beacon assay, invader (Third wave technologies), a ligase chain reaction assay, 5'-nuclease assay-based techniques, hybridization capillary array electrophoresis (CAE), pyrosequencing, protein truncation assay (PTT), immunoassays, haplotype analysis, and solid phase hydridization (dot blot, reverse dot blot, chips).

34. (Currently Amended) A method of detection of a ~~the~~ polynucleotide comprising a polynucleotide selected from the group consisting of:

a) a polynucleotide having the nucleic acid sequence of SEQ ID NO:4;

(b) a polynucleotide encoding a polypeptide having the amino acid sequence of SEQ ID NO:28;

(c) a polynucleotide having a nucleic acid sequence with at least 70%, at least 75%, at least 80%, at least 85%, at least 90% or at least 95% sequence identity to an OCT1 gene, wherein said polynucleotide has at least one nucleotide exchange or deletion at position 109130 of the OCT1 gene (GenBank Accession No: GI:9581607).

(d) a polynucleotide capable of hybridizing to an OCT1 gene, wherein said polynucleotide has at least one nucleotide substitution at a position corresponding to position 109130;

(e) a polynucleotide capable of hybridizing to an OCT1 gene, wherein said polynucleotide has a T at a position corresponding to position 109130 of the OCT1 gene (GenBank Accession No: GI: 9581607);

(f) a polynucleotide encoding an OCT1 polypeptide or fragment thereof, wherein said polypeptide comprises an amino acid substitution at position 61 of the OCT1 polypeptide (GenBank Accession No:GI:2511670); and

(g) a polynucleotide encoding an OCT1 polypeptide or fragment thereof, wherein said polypeptide comprises an amino acid substitution of R to C at position 61of the OCT1 polypeptide (GenBank Accession No: GI:2511670).

in a sample comprising the steps of:

(a) contacting a ~~the~~ solid support comprising one or a plurality of said polynucleotides or a solid support comprising one or a plurality of said polynucleotides and being selected from the group consisting of a membrane, a glass- or polypropylene- or silicon-chip or oligonucletide-conjugated beads or bead array, which is assembled on an optical filter substrate with the sample under conditions allowing interaction of said ~~the~~ polynucleotide ~~of claim 1~~ with the immobilized targets on ~~a~~ the solid support and;

(b) determining the binding of said polynucleotide ~~or said gene~~ to said immobilized targets on said ~~a~~ solid support.

35. (Currently Amended) An in vitro method for diagnosing a disease comprising the steps of the method of claim 34, wherein binding of said polynucleotide ~~or gene~~ to said immobilized targets on said solid support is indicative for the presence or the absence of said disease or a prevalence for said disease.

36-41. (Canceled)